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AUTHORS: Sych, Ye. D., Smaznaya-Il'ina, Ye. D.

TITLE: Thiazole cyanines. XI. Synthesis of thiazole cyanines from thiazole derivatives with heterocyclic radicals as substitutes

PERIODICAL: Ukrainskiy khimicheskiy zhurnal, v. 28, no. 9, 1962, 1087 - 1095

TEXT: The present work was carried out at the Institut organicheskoy khimii AN USSR (Institute of Organic Chemistry AS UkrSSR). New derivatives of thiazole were synthesized with heterocyclic radicals as substitutes in the 4- and 5-position of the thiazole ring. The substitutes were α -furyl, α -benzofuryl, α -thienyl, and β -thionaphthenyl. From the quaternary salts of the obtained bases the corresponding merocyanines, rhodacyanines, monomethine- and trimethine cyanines were synthesized and the absorption maxima of the alcoholic solutions of these dyes determined. It was observed that heterocyclic radicals effect a greater bathochromic shift than aromatic radicals. The intensive colour of 5,5'-di-(β -thionaphthenyl)-thiazole-carbocyanine is stipulated by steric hindrances in 5-(β -thionaphthenyl)-thiazole. The monomethinecyanines were synthe-

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sized by boiling equimolecular quantities of the corresponding ethyl-p-toluolsulphonates of 4-aryl- or 5-arylthiazole, iodine ethylate of 2-methylmercaptobenzthiazole and triethylamine in absolute alcohol. Trimethine cyanines were prepared in two ways: 1) Equal amounts of the ethyl-p-toluolsulphonate of the thiazole derivative and the corresponding orthoester were boiled in pyridine after adding acetic anhydride, or 2) (suggestion by N. N. Jveshnikov, and N. S. Stokovskaya) equimolecular amounts of ethyl-p-toluolsulphonate of the corresponding aryl-2-methylthiazole, ethoxymethylene malonic ester and triethylamine were heated in absolute alcohol. Merocyanines with the substitute in position 4 were obtained by heating equimolecular amounts of the quaternary salts of the corresponding 2-anilinevinyl-derivatives of thiazole with 3-ethylrhodanine in absolute alcohol and triethylamine, while the 5-substituted compound was prepared by heating the quaternary salts of the corresponding derivatives of 2-methylthiazole with 5-aniline-methine-3-ethylrhodanine in pyridine. The rhodacyanines were synthesized by heating 0.001 mole of a merocyanine with 0.002 mole dimethylsulfate, the excess of the latter removed and the purified residue mixed with 2 ml pyridine and 0.001 mole of the quaternary salt of the thiazole derivative and boiled for 1 hour. The characteristic data of all synthesized

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dyestuffs are presented in tables.. There are 6 tables..

ASSOCIATION: Institut organicheskoy khimii AN USSR (Institute of Organic
Chemistry, AS UkrSSR)

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